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# THE PLANT DISEASE REPORTER

Continuation of

THE PLANT DISEASE BULLETIN

Issued By

## THE PLANT DISEASE SURVEY

Volume VII Number 4

August 1, 1923

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

THE PLANT DISEASE REPORTER

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Vol. VII. August 1, 1923 Number 4

# THE STEM RUST SITUATION

## RECENT TELEGRAMS FROM BARBERRY ERADICATION STATE LEADERS

Ohio: A light general sprinkling of stem rust developed on wheat throughout Ohio, too late to be a large factor in yield reduction. General light infection, mostly in red stage, at or just before harvest. Several severe local epidemics occur in various parts of the state. Fungus on wheat in local epidemic areas black at harvest. Serious local outbreaks occurred only near infected barberries. Loss estimate for Ohio will probably not exceed five percent of entire crop. (Baringer, July 30)

Illinois: General infection of stem rust on wheat but very light and spotted. Isolated cases of heavy rust found in low fields, due probably to excessive moisture. Rust slightly heavier on soft wheats than on hard winter wheat. Appeared too late to do any appreciable damage. (Curran and Frolik, July 28)

Michigan: Very destructive attacks of rust in vicinity of escaped barberry areas in Genesee County. Traces in wheat fields removed from barberries. Very little rust in St. Clair County. No devastating attacks reported in the southern counties. Wheat is practically all cut, and no known marked losses suffered from rust except those associated with barberries. (Reddy, July 28)

Wisconsin: Before July 15 stem rust was confined to limited local outbreaks near barberries. Humid weather since has resulted in general spread, at least from Madison to Milwaukee and Beloit, in the central counties and the St. Croix Valley. Reduction in yield slight except in a few fields of late spring wheat, mostly in Rock County, in which few it may reach 50%. (Fracker, July 28)

Minnesota: Stem rust is general in Minnesota; appeared one week later than usual. Average loss from rust in the southern half of the state is less than 3%. Scab on Marquis is more serious in that section than rust. In the Red River Valley rust is prevalent and the late wheat is liable to suffer. (Lambert and Melander, July 28)

Iowa: Stem rust of wheat general throughout state but with very light infection. Loss less than one percent. (Muncie, July 30)

North Dakota: Rust is general all over the state; ranging from moderate to heavy infection in susceptible wheat grown in Red River Valley counties. Rust light to moderate in balance of the state west of the Valley, except a few spots in central area. Very light rust in some sections of the northwestern counties. Barberry bushes traced from heavy rust area in Pembina and Grand Forks Counties. (Mayoue, July 28)

South Dakota: Marquis over entire northeastern part of the state suffered 15 to 20% loss from stem rust, Kanred and Turkey Red 20%, other wheat varieties, oats, rye, and barley very little loss. Wheat near Mitchell is threshing twelve bushels to the acre. General light rust infection but little damage in western part of state. (Hutton, July 28)

Nebraska: There was only slight rust damage of winter wheat this year. There were individual fields with a loss of about 10% of the crop. In the eastern half of the state the infection varied from 5 to 40% with from 20 to 75% of the plants in the fields rusted. In the western part infections ran from 5 to 50% and from 15 to 50% of the plants were rusted.

The damage in the spring wheat sections may be considerably higher. Most spring wheat is still unharvested in the western part of the state. Infections vary from 5 to 30%. From 40 to 90% of the plants are rusted. (Thiel, July 28)

Wyoming: Stem rust infection in Wyoming five to ten percent in Albany, Crook, Platte, Natrona, Laramie, and Sheridan Counties; others rust free. (Cotter, July 30)

Montana: Stem rust of wheat prevalent in eastern Montana west to Forsythe; severity 100% with numerous pustules, one on each stalk, gradually decreasing in severity as western limit of infection is approached. No rust found west of Forsythe to date; no rust found on oats, barley or rye. (Christopher, July 31).

## LEAF RUST OF WHEAT

Recent reports of wheat leaf rust are at hand from New York, Delaware, Virginia, Kentucky, South Carolina, Mississippi, Ohio, Illinois, Missouri, Michigan, Minnesota, North Dakota, Nebraska, Kansas, Colorado, and California. Practically all of these states with the possible exception of Nebraska report less damage from leaf rust than last year. The reason that is commonly given for this is that the rust appeared considerably later than usual. Some attribute this to weather conditions of the spring and Valleau in Kentucky suggests that it was due to the small amount of rust which overwintered. A few of the more comprehensive state reports follow:

New York: Leaf rust up to the 20th of June was present only in very small amounts. About the 25th many new uredinia appeared but on account of the dry spring there is apparently only one-half to two-thirds as much as last year. At no time this year did the average amount of leaf rust infection exceed 40% as compared with an average of 66% for last year. (Kirby, July 15).

Delaware: Observed on upper leaves May 31. Has not affected maturing of crop this season. Infection appeared later than usual and confined to the upper three leaves. Wheat is well filled and yields much above average. (Adams, July 16).

Illinois: Earliest appearance noted was May 20 in Madison County. Many fields examined in 36 counties have shown it to be prevalent throughout the state. Infection was late, and not so severe as during the past two years. Infected varieties have included Red Wave, Fulz, "Peck Wheat", Fulcaster, Stoddard County Pride, New Columbia, Turkey Red, Turkey 10-110 Red Cross, Black Hull, Winter Fife, Red Rock, Kanred, Indiana Swamp. (Tehon, July 15).

North Dakota: The orange leaf rust was as late in making its appearance as was black stem rust. It was first noted at Fargo on June 28th. Even on wheats very susceptible to this rust, few pustules have appeared. Infection is fully a month later than in 1922. (Weniger, July 1).

Nebraska: Very common by the middle of May and developed very rapidly owing to abundant moisture. In fact, a combination of hot weather and leaf rust in June was largely responsible for the failure of the heads to fill out. This trouble was exceedingly general and during one week many specimens were received from all parts of the winter-wheat belt. (Peltier, July).

Kansas: In the state as a whole there was about the average amount. In some counties it was quite severe, causing some injury. There is strong evidence that biologic strains of leaf rust occur in Kansas. (Melchers, July 15).

California: Traces of leaf rust appeared in the Sacramento Valley, Tulare Lake Bottom in the San Joaquin Valley and on the Coast. (Mackie, July 1).

## BUNT OF WHEAT

Reports of bunt occurrence have been received from ten states - New York, Virginia, Kentucky, Illinois, Ohio, Michigan, Nebraska, Kansas, Colorado, Arizona, and California. In general only slight amounts of the disease are reported, but in parts of Illinois, Nebraska and Arizona the disease appears serious. In Virginia and Arizona good results are reported by the use of the copper carbonate seed treatment.

New York: The amount of bunt was about the same as last year when it was only a trace. This year it will likely run .05 of 1%. Five percent is the highest percentage of infection found in any field this year. (Kirby, July 15).

Illinois: The first observation of this disease was made May 20 in a field of Red Wave in Madison County. The infection there was approximately 1/2%. Since that time bunt has been observed in 18 counties in the state. The percent of infection has varied from none in many fields to as much as 20, 30 and even 40%. Varieties of wheat have included Red Wave, Fulz, Red Rock, Turkey, Indian Swamp, and Black Hull. Highest percentages of infection appear consistently in Fulz, and there is a general feeling that any new seed if Black Hull should be treated before planting.

The use of treatment is spasmodic and not always careful. Hence it is often not effective. (Tehon, July 15).

Michigan: Less than usual in state; fall of 1923 exceptionally favorable for quick germination and growth. Probably less than 1%.

In our heavily smutted plantings an average of 26% smut as opposed to 60% in other years. (Coons, July 15).

Nebraska: About the same as usual, the amount of infection ranging from a few heads to 10% in most fields observed in Eastern Nebraska. In Western Nebraska the percentage of infection runs much higher. (Peltier, July).

Arizona: Bunt is bad this year in Pinal County in one grain district, according to report. No details as to actual loss. Good results have been obtained with copper carbonate dust used in treating seed wheat for bunt. Correspondence with millers of the State shows that figures given in past years on losses due to smut have been much too conservative. (Brown, July 1).

California: Bunt is relatively scarce, being absent over great areas but still persisting in spots when proper treatment of seed has not been followed or where soil infestation occurs. (Mackie, July 1).

## LOOSE SMUT OF WHEAT

[illegible] reported loose smut of wheat. In New York it is present in about the same amounts as last year affecting about 1% of the plants. In Delaware Adams reports it as more common than usual, many fields showing from 8 to 10%. From Ohio Thomas writes, "Much more serious than usual. Average for the state will be between 5 and 7%." In Illinois about 150 fields distributed through 27 counties were examined, according to Tehon. Most of the fields showed from a trace to 2% but 2-5% was occasionally found and 15% infection was rare. From Michigan Coons reports less than in 1922, the highest percentages seen being about 5%. In Minnesota about 1% was reported. In Nebraska less than 1% infection was observed, according to Peltier. The following notes concerning susceptibility and resistance of varieties is contained in these recent reports.

New York: Loss highest in varieties Dawson, Red Rock and Honor and lowest in Number 6 and Forward. Practically no loss in the two latter varieties. (Kirby).

Ohio: The Trumbull variety apparently shows resistance. (Thomas).

Illinois: The heaviest infections have been in Red Cross, Stoddard County Pride and Fultz. Fulcaster has rarely shown more than one-half of 1%. (Tehon).

## WHEAT SCAB

More states seem to be reporting scab this year than usual. New York, Virginia, Kentucky, Ohio, Illinois, Michigan, Missouri, Nebraska, South Dakota, and Minnesota having sent in reports. In the most eastern of these states the disease is reported as of very slight importance. However, in Kentucky, Illinois and Missouri, high percentages have been found and in Nebraska and South Dakota it is reported as much more prevalent than usual, while from Minnesota the report comes that it is common and serious in the southern part of the state. In Kentucky scab counts were made in about 100 fields. The results of this survey sent in by Valleau in many cases show scab to be worse in wheat fields following corn in rotation. However, as will be seen from the following statement, Valleau gives a reason for this phenomenon that is different from the one ordinarily accepted.

"It will be noted that scab is often worse on corn land than following some other crops on the same farms. The percent of infection is high following any of the crops. We are of the opinion that the higher percentages found on corn land are due to the greater susceptibility of wheat on corn land rather than to a greater abundance of spore material, as it has been observed throughout the infection that, in general, scab is worst on land lacking in fertility. Wheat is quite generally poorer following tobacco, grass, clover, etc."

## ANTHRACNOSE OF WHEAT

New York, Ohio and Illinois report this disease caused by Colletotrichum cereale especially serious in Ohio this year, but New York and Illinois

report considerable amounts of it.

New York: Anthracnose was present in about the same amounts as 1922 when an average of 3% infection was observed. It was first found on June 14 and after that date it was observed in nearly every wheat field examined. (Kirby, July 15).

Illinois: "We have been impressed, this spring, by an apparent increase in the amount of infection, and the serious effect, of Colletotrichum on our winter wheats. Hitherto, this disease has not been commonly seen or reported. This spring, however, I have found it in many fields. Occasionally losses of 5% were evident.

"The disease has attracted the attention of many farmers, and my own observations have been added to by the receipt of specimens and requests for diagnosis."(Tehon, July 6).

## SEPTORIA DISEASES OF WHEAT

With the publication Weber's article on the Septoria diseases of wheat (Phytopath. 12: 537-585. 1922) the two diseases which he has called glume blotch (Septoria nodorum Berk.) and speckeled leaf blotch (Septoria tritici Desm.) have been clearly differentiated so that it is now possible for anyone to distinguish between these troubles. The symptoms are different and the fungi are distinct morphologically. From now on it is hoped that all persons reporting on these troubles will carefully make the distinction and will send specimens, if possible. The following reports are at hand.

Glume blotch caused by Septoria nodorum:

This disease was common in Georgia and the Carolinas earlier in the season. In Delaware, Adams reported it as prevalent on premature wheat July 16 and stated that at the Experiment Station it was prevalent on unfertilized plots but only present in traces on certain plots receiving fertilizer. In New York Kirby reports only about half of the infection of last year and attributes this to the cold and dry spring. From Arkansas Rosen writes that the disease is very prevalent on a number of varieties at the Experiment Station Farm, and in Minnesota it is said to be common in many fields but is too late to do any damage.

Speckled leaf blotch caused by Septoria tritici:

This disease seemed to be more common and possibly more serious this year than the glume blotch. Some of the reports follow:

New York: This disease was first observed on May 2nd and seemed to be very common on the wheat plants throughout New York during the early spring. Due to dry weather the amount of infection decreased after the wheat plants started to send up culms. In general there was only a very small amount of this disease this year and it seemingly caused little or no loss. (Kirby, July 15).

Delaware: Septoria leaf spot very common. (Adams, June 14).

Illinois: Septoria leaf spot of wheat occurs in all wheat fields inspected. During June, while it could be readily observed, spots were generally noted on the lower half or two-thirds of the leaves of the plants. In some fields it seemed to be doing a small amount of damage. It is prominent at the time the wheat is blossoming. (Paul A. Young, July 13).

Iowa: Septoria leaf spot is very general on the lower leaves. To date the upper leaves are strikingly free, due possibly to the dry spring weather. (Melhus, June).

Nebraska: Very common this spring throughout the winter-wheat belt on the lower leaves, causing some killing of the leaves. The trouble disappeared about heading time and no head infections were noted. (Peltier, July).

## POWDERY MILDEW RANKS SECOND IN IMPORTANCE OF NEW YORK WHEAT DISEASES

"Mildew (Erysiphe graminis) was very common on wheat this year. It was first observed on May 2 and increased rapidly up until the time the wheat began to head out. There seemingly was as much mildew as in 1922 and this disease likely caused as much loss as any other disease excepting loose smut." (Kirby, July 15).

## BLACK CHAFF GENERAL IN NEBRASKA AND KANSAS

"Shortly after the wheat in the winter-wheat belt of the state headed out, numerous specimens of plants infected with black chaff (Bacterium translucens undulosum) were received. In all instances, black chaff was confused by the farmers with stem rust. The variety most commonly received was Kanred. While black chaff was very general throughout the winter-wheat belt, no apparent damage resulted. The general prevalence of black chaff in Nebraska this spring can be connected up with the cold, wet weather which prevailed about the time the plants were heading." (Peltier, July).

"Widespread but not serious for the state as a whole. Infection came in late and unfavorable weather conditions (for the organism). Occasionally a field was seen that was injured considerably. This is the first season since 1915 that black chaff was widespread." (Melchers, July 15).

## RECENT REPORTS ON OPHIOBOLUS AND WOJNOWICIA

Take all caused by Ophiobolus cariceti:

New York: On account of a cool spring which was exceptionally dry, take all did not show up in the fields until about two weeks later than last year. (Appeared about June 10 this year). Take

all was found to be present in slightly smaller amounts than in 1922 and the wheat plants that were infected were not as badly dwarfed. As for example, the average infection in Cayuga County was 1% for 1923 as compared with 1.3% for 1922. (Kirby, July 15).

Kansas: The Ophiobolus cariceti has been found in four counties this year. While it is quite probable that it occurs in a number of other places, the perithecia have not been found to definitely prove this to be so. (Melchers, July 15).

Wojnowicia graminis:

New York: This disease after appearing on May 23rd apparently did not materially increase in severity. It has been found in small amounts in five counties, four of which are new locations for this disease. Further, it has been found in two counties at points quite remote from the take all infested area. (Kirby, July 15).

## ERGOT OF RYE UNCOMMON

Judging from reports from Connecticut, Ohio, Illinois, Michigan, Wisconsin, Minnesota, and Nebraska, it seems that there is much less ergot this year than usual in those states. The reason for this is thought to be dry weather during the blossoming period.

## ANTHRACNOSE OF RYE

This disease was more severe than usual in New York and Virginia, according to the following reports of Kirby and Fromme. It was conspicuous also in Ohio.

New York: Anthracnose was especially severe this season being the most destructive disease of rye. The percentage of infection was well over 10% and many plants were badly stunted and often killed, especially when growing as volunteer plants on wheat fields. (Kirby, July 15).

Virginia: General and causing considerable complaints, especially in middle and southern sections of the state. (Fromme, July 1).

## STEM SMUT OF RYE

Considerable amounts of stem smut of rye (Urocystis occulta) have been reported locally in a number of states.

New York: Smut was first found on rye on May 30 at Ithaca. Smut was found on rye in five counties but outside the Hudson Valley it was found in very small amounts. In Columbia and Dutchess counties there was an average of 0.5% infection. (Kirby, July 15)

Virginia: Prevalent in spots in one field near Bridgewater. (Fromme, July 1).

Illinois: One 20% infection seen in each of Hancock and Christian Counties. Relatively little commercial rye in Illinois. (Paul A. Young, July 13).

Michigan: E.A. Bessey reports a field near Battle Creek with 10%. (Coons, July 15).

Wisconsin: Found at Ashland, Wisconsin; first location that section of state; 2-3% plants infected. Specimens have been sent in. (Vaughan, July 15).

Minnesota: First found May 26. Fairly general in southern half of state now. Highest percentage in any one field - Blue Earth County, 20 percent. Average about 2% in southern one-fourth of state. (Sect. Pl. Path., June 10).

## HALO LEAF BLIGHT OF OATS

This disease caused by Bacterium coronafaciens is common in parts of the Middle West as will be seen from the following reports.

Minnesota: Common and general in the southern one-fourth of the state June 7. (Sect. Pl. Path., June 10).

Iowa: Halo leaf spot found for the first time May 28th in Central Iowa. Infection very scattered, not general. (Melhus, June).

Nebraska: About the same as usual. A trace to a light infection in most fields but doing no apparent damage. (Peltier, July).

California: Bacterial halo blight of oats was commonly found in nearly all oat growing sections, but not in severe form. (Mackie, July 1).

## CROWN RUST OF OATS (Puccinia coronata)

South Carolina: General, but apparently not serious. (Ludwig, July 1).

Mississippi: Date of first report April 9th, A. & M. College. Slight infection observed on lower leaves. Reported from Poplarville, Pearl River County on April 10th as causing serious injury. Also reported from Clarke, Kemper, Lauderdale, and Newton counties. Infection from 5 to 10 percent in these counties. (Sect. Pl. Path., July 1).

Louisiana: The crown rust was particularly severe this season. Many fields had a loss of 50%, while the average was well above 25. A very mild winter allowed an early growth with a very early infection of the rust. The supposedly resistant varieties were injured very badly. (Edgerton, July 15).

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Texas: Very prevalent. (Taubenhaus, July 1).

Illinois: In the southern end of the state, in June, only slight infestations were apparent, but in Iroquois, Livingston, McLean, Logan, Morgan, Christian, Montgomery, Shelby, and Macon Counties, 100% infestations were commonly seen and, especially in the last two counties mentioned (Logan and Macon), there was some distinct injury done, now expressed as premature and abnormal ripening. (Paul A. Young, July 13).

Nebraska: A diligent search for aecial stage on Rhamnus by several of us resulted in failure. So far as I know, no aecial stage on Rhamnus has been found in Nebraska this year. In previous years a few cluster cups could be easily found on Rhamnus.

Crown rust did not appear until the middle of June, so that it has not caused much damage. Only a trace to a light infection could be found in the oats fields in the vicinity of Lincoln. (Peltier, July).

## BARLEY STRIPE (Helminthosporium gramineum)

Stripe of barley has been recently reported from Delaware, Illinois, and Nebraska. Specimens have also been received from Texas. In Delaware according to Adams, spring barley treated with "Semesan" showed complete control while the check contained one-half percent of stripe. In Nebraska Peltier reports the disease as common and causing some reduction in yield.

## BARLEY SEED TREATMENTS REPORTED FROM DELAWARE

"Very abundant with winter barley. Four fields planted with seed from same source, three of which showed a prevalence of 22% smut while the fourth field showed only 8% smut. Five acres planted to "Semesan" treated seed showed .5% smut while the check of seven acres showed 22% smut. Probably complete control would have been secured if care had been taken to resack treated seed in disinfected sacks." (Adams, July 16).

"A field of spring barley treated with "Semesan" showed only a small trace of loose smut, while the check averaged 1% loose smut." (Adams, July 16).

## MORE CLOVER POWDERY MILDEW REPORTS

Delaware: Observed on Red Clover June 20. Very little prevalence observed to date. Drouth has seriously affected hay crop and pastures, which no doubt has reduced prevalence of disease compared with the past two years. ((Adams, July 16).

Ohio: There is not as much powdery mildew of clover in this vicinity as last year. However, some infestation is to be noted in practically every field; the season has been unfavorable for both host and parasite. (Wilson, July 25).

Illinois: May 17, when we began our field work there was no mildew to be found in the region near Edwardsville. About May 22, it began to appear, and by the middle of June was common.

By June 2, half the leaves on half the plants were covered in fields in Jackson County. In Saline County on the 6th a third of the leaves on all plants were affected. On the same date in Calhoun County the infection was scarcely evident. On June 14 in Washington County the infection appeared about half what it was last year. This condition has held true for fields examined in Jefferson, Perry, Randolph, Monroe, Macoupin, Sangamon, Adams, Hancock, Greene, and Champaign Counties.

The condition this year is generally one of much milder infection than last year. (Tehon, July 6).

Kansas: The mildew is present again in Kansas this year, but not in such a severe amount. It has been noticed around Manhattan quite frequently and in other counties, but is nothing like it was last year. I have not received any reports from county agents this spring in regard to the clover mildew and I think that is a pretty good indication that it is not causing the anxiety and trouble that it did last year. (White, July 3).

## APLANOBACTER AGROPYRI COLLECTED IN NEBRASKA

Specimens of western wheat grass (Agropyron smithii) affected with the bacterial disease described by O'Gara (Phytopath. 6: 341-350. 1916) as caused by Aplanobacter agropyri have been received from G. L. Peltier in Nebraska. The specimens were collected during July in the western part of the state and constitute the first collections for the state as far as is known.

## DYING OF BLUE GRASS IN SOUTHERN OHIO

"Serious dying of blue grass pastures in irregular patches is reported in southern Ohio. Specimens examined have shown the fungus **Colletotrichum cereale** to be the prevailing organism associated with the disease." (Thomas, June 15).

## EPIDEMIC OF FIRE BLIGHT ON APPLES

During the latter part of June an unusually heavy infection of apple twigs occurred in many parts of the country. We have reports of serious blighting of a new growth of apples from the majority of the northeastern states from Virginia to New Hampshire and westward to North Dakota and Kansas. The more exact limits of this twig blight outbreak, however, are rather imperfectly known and so collaborators in all states are requested to send in a statement concerning the prevalence of this disease. Of the western states, Arizona, Colorado, Idaho, and Washington have all reported the disease and the last three mention it as especially bad. Other and more detailed reports are needed from the Pacific States.

In Virginia Fromme reports an unusual amount of fruit infection and associates this with hail injury.

## REPORTS ON CEDAR RUST OF APPLES

Delaware: Cedar apples showed mature telia May 9, 1923. First infection upon apple leaves, pycnia stage, observed May 24 on Dutchess at Millsboro, Sussex County. Only a trace has been observed since this date and period of infection is considered past. (Adams, July 15).

Virginia: The late infection is proving of more importance than was previously supposed. Losses will not, however, approach that of recent epidemic years. (Fromme, July 15).

Virginia: First appearance, May 17. The cedar rust infection is about half as severe as in 1922. There is a sharper localization of infection this year. Approximately four leaves on every twig show heavy infection this year. The first fruit infection by cedar rust was noted on June 9. In Shenandoah and Augusta Counties where thousands of cedar trees were cut down during the past winter, the infection on apples is approximately 5% compared to 100% of infection last year. The cedar cutting campaign and the dry weather caused this low infection percentage this year. (F. J. Schneiderhan, July 10).

West Virginia: More generally distributed than last year. The infection took place rather late in the season. Leaves number five, six and seven are quite heavily infected. (A. Berg, July 1).

## MORE APPLE SCAB REPORTS

Delaware: Apple scab shows increased prevalence compared with 1922. Ascospore discharge March 28 but much lighter than last year. First important infection period about petal fall. Infection appeared May 9. Infection of sepals and fruit pedicels very prevalent, particularly upon Maiden Blush, Winesap and Nero. (Adams, July 16).

West Virginia: Much lighter than last two years. Probably due to the general dry weather this spring. (A. Berg, July 1).

Virginia: Scab normal throughout commercial fruit belt. General lack of rainfall during period of rapid fruit and foliage development has been the important factor. Wintered over leaves collected at Blacksburg on April 19th discharged ascospores in the laboratory the following day. Fruit infections seen in field on May 18. (Fromme, July 15).

Virginia: First appearance, May 16. On June 10 of 1922 the scab infection on check trees was 80% while this year in July the infection on the check trees is a mere trace. There is evidence of a striking correlation between climatic conditions and disease infection in the fruit section of the Valley of Virginia this year. Scab is not comparable to the epidemic of 1922. (Schneiderhan, July 10).

Minnesota: Common, but infection generally light. Definite reports from 5 counties. (Sect. Pl. Path., July 15).

South Carolina: One specimen received for diagnosis. Apples submitted had several spots but have no data as to amount in the orchard. (Ludwig, July 15).

## BACTERIAL SPOT OF PEACH

Bacterial spot caused by Bacterium pruni has been reported as of July 1 from New York, Delaware, South Carolina, Mississippi, and Texas. In New York it seems to be much more severe than usual being reported repeatedly on both peach and cherry and occurring generally throughout the state. In Delaware Adams reports that leaf infection is not so prevalent as last year but fruit infection appears to be more common. In Mississippi it was serious on early varieties causing defoliation in some cases.

## PEACH LEAF CURL

Considerable amounts of leaf curl occurred this spring as usual on unsprayed trees. It does not appear to have been especially bad in any state although in Virginia Fromme reports more than normal for the state as a whole.

## BROWN ROT OF PEACHES

No reports of great damage from brown rot have come to hand up to date of August 1. The early crop of Georgia peaches was of very good quality being quite free from rot. At Clemson College, South Carolina the disease damaged local orchards to the extent of about 50%. Information is needed now as to the extent of brown rot damage in other and more northern peach states such as Virginia, Maryland, West Virginia, Delaware, New Jersey, Pennsylvania, New York and states west.

## LOOK OUT FOR THE ALFALFA EEL-WORM

All readers of this publication are urgently requested to use every means in their power to determine whether or not the destructive eel-worm disease of alfalfa occurs within the borders of their states. The presence of the disease in America was first noted in 1921, when it was discovered in a single field near Hermiston, in eastern Oregon. Since then it has been found to be much more widely distributed in that general locality than was at first thought, and in addition it has been found in two other sections, one near Watsonville, in Santa Cruz and Monterey Counties, California, and the other near Canon City, Colorado. It is considered very possible that the disease occurs in other parts of the country; consequently this appeal is made for aid in securing as complete a survey as possible over the entire country during the present growing season.

The alfalfa eel-worm disease is a bad one where it occurs elsewhere in the world. In South Africa, especially, it is almost universally distributed, and wherever it occurs, shortens the life of the crop by several

years. In America it has not been under observation long enough to know its full capabilities of doing damage. Where it has been observed, however, it is serious enough to be causing general alarm. In one section, a field only three years old was almost completely destroyed by this disease. In another section, portions of fields of various ages were reduced to a distinctly unprofitable condition within a year or two and in addition the disease has spread alarmingly from original points of infestation.

## Description of the Alfalfa Eel-worm Disease

The disease is manifested by a thinning out of alfalfa in spots in the field, due to the dying of some of the plants. This leaves a poor stand of dwarfed plants with a reduced number of stems, some of which may be more or less yellowed and distorted. In an early stage of the disease, a wilting of some of the stems may be the sign by which the presence of the disease may be recognized. A close examination of affected plants reveals that the disease is seated in the crown of the plant. Stems are swollen at the base and brown in color. They are often brittle and easily broken off; in fact, this is one of the means of easy diagnosis. New buds and sprouts arising in the crown may be swollen, pale yellowish or cream colored, and of a spongy texture. Rapidly growing, succulent shoots that are affected are often swollen at their tips, or may have swollen side shoots, thus carrying the disease from a few inches to a foot or more above ground.

When examining a sickly spot in a field for the possible presence of the disease, one should take into consideration more than one of the symptoms listed. A thin spot may be caused by any one of a variety of conditions, such as a poor initial stand, too little or two much water, an alkali spot, a deep cut when the ground was graded, or to some other disease such as Sclerotinia wilt. The surest symptoms by which the eel-worm disease may be recognized are the swollen buds and sprouts and the enlarged browned stems mentioned above. When once the disease is seen, the striking contrast between an affected and a healthy stem is very evident.

Badly diseased plants show a distinct rotting of stem bases and crown, with some or all of the stems completely killed. The rot in such plants extends into the roots, hence the names "stem-rot" and "root-rot" which are sometimes applied to the disease, though there are other stem and root rots of alfalfa distinct in origin. Plants in such condition rarely survive the winter.

## Season of Appearance

The spring of the year is the best time to look for the disease. The symptoms described are more prominent before the first cutting than after it. The typical symptoms can be recognized at any time, however, though in mild cases, the occasional affected plants may be completely covered up by the vigorous growth of surrounding healthy plants. A favorable time for a survey is the period of two or three weeks after the new growth has obtained a good start, following a cutting. Then diseased plants can easily be spotted by their generally weakened condition and off-color. Much of the spread of the disease appears to take place in the fall, winter, and early spring. Diseased fields therefore are invariably in much worse condition in the spring than they were the season before.

## Cause of the Disease

The organism that causes the disease is Tylenchus dipsaci, an eel-worm scarcely a twentieth of an inch long when fully grown. As many as 200 eggs may be laid by a single individual and the young are the same shape as the adults but only about a tenth as large. Under moist conditions these migrate or are carried by irrigation water or other means to new plants. Penetrating the plant through tender succulent parts, they grow to maturity within the plant tissues. Their presence there is a stimulation which causes the swellings and abnormal development, and their parasitic action robs the plant of its power to produce a strong growth. Finally the nematodes become so abundant as to completely kill the plant, when they leave it and migrate into the soil to attack other plants they may be able to reach. The organisms may be carried long distances in diseased hay, for they are very resistant to drying.

## The Disease a Possible Menace to Other Crops As Well

A further reason for prompt and aggressive action in dealing with this disease is the fact that the causal organism may under favorable conditions pass over to and affect other crops. In a small experimental way, red, white, and alsike clovers, buckwheat, English pea, turnip, and even potatoes have been attacked and definitely injured by the alfalfa eel-worm. Some weeds are also subject to infection. The entire list of possible hosts has not yet been tried out. From the results already secured, however, the alfalfa eel-worm disease, aside from its seriousness on that crop alone, appears to be a menace to agriculture which should be met promptly by strenuous measures. We should attempt to spot all infestations, and to eradicate the disease now, a thing which is very possible of accomplishment unless it is already too generally established. If we do this, the immense losses due to reduced yields, and to need for more frequent plowing up and replanting, such as occurs in South Africa, may be avoided. (G. H. Godfrey, July 26).

## THE STEM NEMATODE OF DANDELION IN THE NORTHEAST

"During the course of the Fifth Annual Field Meeting of Phytopathologists. held July 9-12, in western New York, the stem nematode (Tylenchus dipsaci) was found in some abundance infesting the dendelion (Taraxacum officinale).

"The symptoms were typical of those produced by the same organism on other hosts,-- a thickening and crinkling of the leaf in spots, or, in the severer cases, in large regions, resulting in marked distortion. Usually a spot could be discerned by its lighter green color, but the very characteristic finely netted crinkling is the distinguishing feature. This is most readily seen as a rule on the lower leaf surface. Often a midrib or one of the branch veins is attacked and shows a swelling and a distortion of the leaf at this point. Sometimes the mesophyll tissue alone is attacked.

"This finding is not especially significant in itself, but indicates the possible occurrence on other hosts, and a possible gradual adaptation which may result in a real problem in American agriculture.

"This constitutes the first finding of Tylenchus dipsaci in the Northeast, aside from its occasional occurrence in Narcissus bulbs imported from Europe. It was found to be widespread. Infected plants were found at Ithaca, Williamson, Medina, and Rochester, N. Y. and even at Vineland and other points in the province of Ontario, Canada. It was not found on a brief survey in a

park in North Philadelphia or at Washington, D. C.

"More complete information on the distribution of the organism, not only on dandelion, but on other plants as well, is very much to be desired. The symptoms in any affected plant will be similar to those described for the dandelion. It is hoped that collaborators will be on the alert for it and will report or send specimens to G. H. Godfrey, Bureau of Plant Industry, Washington, D. C." (G. H. Godfrey, July 24).

## HAS ANYONE SEEN ANY LATE BLIGHT OF POTATO?

During April late blight was common in the Hastings section of Florida, according to Dr. W. A. Orton, but since that time no reports of this disease have been received by the Survey. The disease usually makes its appearance during July in some of the more northern late potato states. July has been such a dry month in this area this year, however, that the conditions have probably not been favorable for development of the late blight fungus. As soon as anyone receives authentic reports or specimens it is hoped that they will notify the Plant Disease Survey at once.

## SCLEROTIUM ROLFSII BAD ON POTATOES IN TEXAS

According to Taubenhaus this fungus assumed an epidemic form this year, killing hills and rotting potatoes in the ground and in transit. He estimates about 30% loss on account of this disease.

## TOMATO DISEASES IN LOUISIANA

Early blight (Alternaria solani):

Much worse than usual due to our very wet season. Most plants defoliated early in the southern part of the state. The disease was also bad in the tomato shipping districts. (Edgerton, July 15).

Bacterial wilt (Bacterium solanacearum):

More bacterial wilt this season than we have had for many years. This is apparently due to the very wet season which we have had. The disease was very bad in the southern part of the state. (Edgerton, July 15).

Wilt (Fusarium lycopersici):

About the same as in preceding years. More resistant seed was used this year with very favorable results. The wilt has not caused as much loss this year as have the other troubles. (Edgerton, July 15).

Mosaic:

Very severe in some sections. The disease is very difficult to control in the southern part of the state on account of the very short period between the fall and spring crops. In many sections, it decreases the crop from 25 to 50%. (Edgerton, July 15).

## PEA ROOT ROT

Root rot of pea, attributed to various causes is reported from Connecticut, New Jersey, Maryland, Ohio, and Wisconsin. From Maryland, Temple reports that the strains of Early Alaska selected for resistance to root rot in 1918, appear to be very promising.

## HAVE YOU SEEN ANY DOWNY MILDEW OF CUCURBITS THIS YEAR?

## SPECIMENS ARE NEEDED

Cantaloupes and cucumbers in Florida and Louisiana suffered from this disease this spring. Early in May the disease began to appear in the important cantaloupe section of Valdosta, Georgia, according to B. B. Higgins, and an investigation by him on May 29 and 30 showed that the disease had spread all over the cantaloupe fields of the section, damaging them very badly. In the cantaloupe section of Blackwell County, South Carolina, the disease was well developed and doing considerable damage to cantaloupes by the middle of June. Spraying and dusting demonstrations conducted there by W. D. Moore of Clemson College showed that it was possible to obtain good control. During the last week of June the disease was observed by Adams and Haskell affecting cucumbers generally in the commercial section about Wilmington, N. C. Cantaloupes, however, in this and nearby sections did not show the disease at this time. This observation is the farthest north of any that has been reported to date. Therefore persons in states along the coast of North Carolina northward are requested to watch cucumbers, cantaloupes and other cucurbits for indications of this disease and to report the same with specimens to the Plant Disease Survey. Since the disease is one that is sometimes somewhat difficult to diagnose and since in certain stages is very liable to be confused with other troubles, it is particularly desirable that specimens, not only of downy mildew but of all kinds of leaf diseases of these crops, be sent in wherever possible.

## A NEW HOST FOR WILDFIRE OF TOBACCO

The following noteworthy contribution has been received from the collaborator from Massachusetts:

> "On June 18 leaf spots similar to those characteristic of wildfire on tobacco were observed on Lima beans at Amherst which had been grown adjacent to tobacco affected with this disease. Bacteria were isolated from these spots and tobacco inoculated from the cultures developed typical wildfire spots. It is apparent then that the wildfire disease of tobacco may affect Lima beans and possibly other hosts." (Osmun, July 10).

## NOTES CONCERNING WILDFIRE AND THE BLACKFIRE OF TOBACCO

Wildfire caused by Bacterium tabacum: "In view of the present widespread distribution of tobacco 'wild fire' I have been interested in ex-

amining tobacco in Illinois. On July 20, I spent a day in the eastern part of Jo Daviess County, which is the only place in Illinois where tobacco is known to be grown commercially.

"The plants seen on that day were from six to twelve inches high and healthy in every way. No spotting was evident on the leaves and there was no history of loss in the seedling beds. It seems apparent that 'wild fire' has not yet invaded Illinois." (Tehon, July 23).

Blackfire caused by Bacterium angulatum: "Caused considerable loss in Perique tobacco fields in St. James Parish. This disease was first reported in this state in 1922." (Edgerton, July 1).

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